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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,922	03/17/2004	Ali E. Dabiri		3092

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EXAMINER
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CWERN, JONATHAN

ART UNIT	PAPER NUMBER
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3737

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06/01/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/801,922	<b>Applicant(s)</b> DABIRI ET AL.	
	<b>Examiner</b> Jonathan G. Cwern	<b>Art Unit</b> 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 2-7 and 15-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/17/04</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Invention I, drawn to an apparatus for diagnosis of tissue, in the reply filed on 1/23/09 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 2-7 and 15-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/23/09.

To summarize, although applicant indicated that an election was made WITH traverse, no arguments or reasoning was provided in support, and so the election was treated as an election without traverse. In addition, while applicant intended to cancel claims 2-7 and 15-27, this cannot be done until applicant submits a new copy of the claims indicating those claims as cancelled. This can be done in applicant's response to this office action. For now, claims 2-7 and 15-27 are treated as withdrawn claims.

### ***Specification***

The abstract of the disclosure is objected to because there are several occurrences of confusing grammar throughout the abstract, for one example, "system for a quick and reliable examining tissue conditions". There are several other sentences which are confusing. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

In the Brief Description of the Drawings section on page 5, change "FIG. 2" to "FIGS. 2a-c".

On page 5, indicate the patent number of the co-pending patent.

Appropriate correction is required.

### ***Claim Objections***

Claims 1 and 8-14 are objected to because of the following informalities:

In claim 1, define the acronym "MOEMS" in the claim.

In claim 1, step e, remove the last "s" from the word "systems".

Claim 8 contains poor grammar and is confusing. It is suggested to add "a" before "fiber", and to add "a" before "handheld".

Also in claim 8, "the femtosecond pulsed laser" lacks antecedent basis.

In claim 14, add "a" before "handheld".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Arnone et al. (US 2003/0149346).

Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b). While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts. In addition, the system of Arnone '346 can be considered a handheld system, as it can be held by a person's hand. Therefore the sample stepper and display can be considered as either inside or outside the system.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Arnone et al. (US 2004/0155655).

Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b). Arnone '346 does not specifically state that the device is handheld.

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Arnone et al. (US 2004/0155655) and Keane (US 5040889).

Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b). Arnone '346 does not specifically state that the device is handheld and that kinoform lenses are used.

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

Keane disclose a spectrometer. Keane teach a handheld probe with a sample stepper within the probe (column 4, lines 8-24).

While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further have been obvious to have incorporated the sample stepper inside the handheld device as taught by Keane, as this would further allow for the device to be more compact and portable.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Arnone et al. (US 2004/0155655) and Zelickson et al. (US 2005/0143754) or Craig (US 5730147).



Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b). Arnone '346 does not specifically state that the device is handheld and that kinoform lenses are used.

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

Zelickson et al. disclose a skin abrasion system and method. Zelickson et al. teach that a display can be either in the handheld device or in the base stand ([0047]).

Craig discloses a combined thermometer and fecal sampling apparatus. Craig teaches that a display can be incorporated in the probe (column 2,

While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld

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probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further have been obvious to incorporate the display into the handheld probe as taught by Zelickson et al. or Craig, as this would further allow for the device to be more compact and portable.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Arnone et al. (US 2004/0155655) and Waldern et al. (US 2001/0043163).

Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b). Arnone '346 does not specifically state that the device is handheld and that kinoform lenses are used.

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

Waldern et al. disclose a method and apparatus for viewing an image. Waldern et al. teach that it is known to use a kinoform lens design when seeking to reduce the size and weight of the optics ([0003]).

While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further be obvious to use a kinoform lens as taught by Waldern et al. in the handheld device, as a small size will be required in order to fit into a handheld device. The use of Fresnel or kinoform lenses when attempting to reduce the size of the optics is old and well known in the art.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Mathews et al. (US 2004/0254435).

Arnone '346 disclose a terahertz imaging apparatus and method. The apparatus is comprised of a light source (laser system 37), a delay line (401), a chopper (405), a terahertz transmitter (407), a first optics system (409), a second optics system (413), a

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detector (35) ([0161-0162]), and a sample stepper (control of sample movement, [0079] and [0084]). The images are displayed (see for example Figures 7a and 7b).

While no mention is made of a matching amplifier, mention is made of signal processing the detected signal. It is inherent to include in the signal processing components some component which matches the impedance of the signal, in order for the device to function properly. The use of impedance matching components is well known in the circuit arts.

Mathews et al. teach that the use of a component to match the impedance in a circuit is required in order for it to be operationally effective, and is well known in the art ([0044]).

It would be obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to include an impedance matching component as taught by Mathews et al.

Claims 8-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Mathews et al. (US 2004/0254435) as applied to claim 1 above, and further in view of Arnone et al. (US 2004/0155655).

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Mathews et al. (US 2004/0254435) as applied to claim 1 above, and further in view of Arnone et al. (US 2004/0155655) and Keane (US 5040889).

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

Keane disclose a spectrometer. Keane teach a handheld probe with a sample stepper within the probe (column 4, lines 8-24).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further have been obvious to have

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incorporated the sample stepper inside the handheld device as taught by Keane, as this would further allow for the device to be more compact and portable.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnone et al. (US 2003/0149346) in view of Mathews et al. (US 2004/0254435) as applied to claim 1 above, and further in view of Arnone et al. (US 2004/0155655) and Zelickson et al. (US 2005/0143754) or Craig (US 5730147).

Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

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It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further have been obvious to incorporate the display into the handheld probe as taught by Zelickson et al. or Craig, as this would further allow for the device to be more compact and portable.

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Arnone '655 disclose a terahertz imaging system. Arnone '655 teach compacting a terahertz imaging system into a handheld probe which can be inserted into the body or used on a body surface, and includes an optical fiber ([0034]-[0035] and [0182]-[0184]).

Waldern et al. disclose a method and apparatus for viewing an image. Waldern et al. teach that it is known to use a kinoform lens design when seeking to reduce the size and weight of the optics ([0003]).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the device of Arnone '346 to fit into a handheld probe as taught by Arnone '655. A handheld device provides many benefits, including allowing for greater ease of control over the device by the operator and making the device more portable and accessible. It would further be obvious to use a kinoform lens as taught by Waldern et al. in the handheld device, as a small size will be required in order to fit into a handheld device. The use of Fresnel or kinoform lenses when attempting to reduce the size of the optics is old and well known in the art.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan G. Cwern whose telephone number is (571)270-1560. The examiner can normally be reached on Monday through Friday 9:30AM - 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jonathan G Cwern/  
Examiner, Art Unit 3737

/BRIAN CASLER/  
Supervisory Patent Examiner, Art  
Unit 3737